## REMARKS

Favorable reconsideration and allowance of this application are requested.

## I. Discussion of Claim Amendments

By way of the amendment instructions above, claim 1 has been amended so as to emphasize that the polyamide, polyester, copolyesters or mixture or mixtures of the polyamide and/or polyester react with the diisocyanate during melt mixing. Basis for such amendment is provided on page 1, lines 30 to page 2, line 10 of the originally filed specification. As will be discussed in greater detail below, the amended version of claim 1 makes it abundantly clear that the present invention is patentably distinguishable over the applied references of record.

Claim 6 is new and requires the polymer obtained by the claimed process of claim 1 to be a linear polymer. Support for such new claim is provided at page 2, line 11 of the original specification. All of the applied prior art documents relate to cross-linked polymers rather than linear polymers and, as such, new claim 6 is clearly patentable thereover.

Therefore, following entry of this amendment, claims 1-6 will be pending herein for which favorable reconsideration is requested.

## II. Response to Art-Based Issues

Prior claims 1-5 have been asserted to be anticipated (35 USC §102(b)) by several prior-issued U.S. patents. Specifically, the following rejections were advanced:

(1) claims 1-2 and 5 have been rejected as anticipated by Mumeu et al '361 (USP 4689,361, hereinafter "D1");

(2) claims 1,3 and 5 have been rejected as anticipated by Sagawa et al '670 (USP 5,252,670, hereinafter "D2");

(3) claims 1 and 5 have been rejected as anticipated by Gras '067 (USP 4,649,067, hereinafter "D3");

(4) claims 1, 3 and 5 have been rejected as anticipated by Brinkman '900 (USP 4,997,900, hereinafter "D4"); and

(5) claims 1, 3-4 and 5 have been rejected as anticipated by Witzeman et al '646 (USP 4,973,646, hereinafter "D5").

As will become evident from the following discussion, none of the applied references D1-D5 render the present invention as defined in the pending claims herein unpatentable.

Applicants initially note that all of the applied references D1-D5 relate to powder coating compositions which are fundamentally different from the compositions of the present invention. Powder compositions use the diisocyanate as a cross linking agent to prepare thermosetting powders. In contrast, the compositions used in the present invention are for use in shaped parts produced by extrusion, injection or blow molding (page 4, lines 33-35).

There is no disclosures in any of the applied references D1-D5 of the polyamide, polyester, copolyesters or the mixture or mixtures of the polyamide and/or a polyester reacting with the diisocyanate ***during melt mixing*** as defined in amended claim 1. The reacting or curing of the powder compositions of D1-D5 during the manufacturing process (melt mixing) rather than at the point of application would have dire consequences, e.g., an extruder, if used, would become inoperable due to the setting of the cross linked composition.

As there is no disclosure of a reaction ***during melt mixing*** between the components, there is also no disclosure of obtaining a polymer of ***greater molecular weight than the starting polymer***, which stems from such reaction. Further, there is also no disclosure that a permanent molecular weight increase in the polymer had been achieved after 2 minutes reaction time during melt mixing.

With regard to the specific applied references, it is noted that D1 relates to a powder coating composition containing blocked isocyanates and polyamide. D1 does not disclose a melt mixing stage, but rather a cold grinding or precipitation step (column 3, lines 38-40). Accordingly, the present invention (claims 1-6) is novel over D1.

Reference D2 relates to a powder coating composition containing blocked isocyanates and polyester. D2 teaches that curing of the powder generally occurs at high temperatures such as 190$^0$C or above. The disclosed melt mixing however occurred at between 80 to 1200C (Column 6, lines 26-27). The powder coating was subsequently reacted (without melt mixing) at a temperature of 200$^0$C (column 6, lines 37-38). Accordingly, the present invention as defined by pending claims 1-6 is novel over D2.

Reference D3 discloses the preparation of one component baking enamels. The enamels are prepared by mixing the polyester component with the blocked cross linking agent (column 3. lines 62-65). The mixture is dissolved in solvents (claim 1; column 2, line 52-53). There is no disclosure that the components are melt mixed. Further the reaction of the polyester and diisocyanate occurs after applying the enamel solution to the target object (claim 15). Accordingly, the present invention as defined by pending claims 1-6 is novel over D3.

Reference D4 relates to a powder coating composition containing blocked isocyanates and polyester. As stated by the examiner, D4 discloses that the polyester and diisocyanate may be melt mixed in an extruder (column 6, lines 13-14). However,

as indicated in Example 1, the extruded material is ground into a powder form, sprayed onto a steel surface sprayed and baked at 129$^0$C to react or cure the polyester and diisocyanate. Therefore, there is no disclosure that the polyester reacted with the diisocyanate *during* melt mixing as required by the claims pending herein. The person of ordinary skill in the art would therefore recognize that reaction during the melt mixing stage was to be avoided to prevent setting or curing of the composition within the extruder. Accordingly. the present invention as defined in claims 1-6 is novel over D4.

Reference D5 relates to a powder coating composition containing blocked isocyanates and polyester. D5 discloses that curing may occur at temperatures from about 1 350C (column 3, lines 5-6; Table 1). D5 also discloses that the composition is blended at a temperature of 90-130$^0$C. Therefore D5 does not disclose the reaction of the polyester and diisocyanate *during* melt mixing as required by the claims pending herein. Accordingly, the present invention as defined by claims 1-6 is novel over D5.

Although not advanced as a rejection against the prior pending claims, applicants also note that the present invention as defined in claims 1-6 is patentably *un*obvious thereover. In this regard, applicants note that the present invention is patentably different from D1 and D3 because of at least the following undisclosed features:

- Melt mixing of the polymer and diisocyanate (claim 1);
- Reaction of the polyester and diisocyanate during melt mixing (claim 1);
- Obtaining a polymer of greater molecular weight than the starting polymer (claim 1);
- Melt mixing by extruder or twin extruder (claims 3 and 4);
- Obtaining a permanent increase in molecular weight within the 2 minutes reaction time during melt mixing (claim 5); and

- the resultant polymer is a linear polymer (claim 6).

The present invention is also patentably different from 02, 04 and 05 because of at least the following undisclosed features:

- a reaction of the polyester and diisocyanate during melt mixing (claim 1);
- obtaining a polymer of greater molecular weight than the starting polymer (claim 1),
- obtaining a permanent increase in molecular weight within the 2 minutes reaction time during melt mixing (claim 5); and
- the resultant polymer is a linear polymer (claim 6).

The combination of the above-mentioned distinguishing features contribute to the process of the invention advantageously quickly producing a colorless, stable linear polyamide, polyester or copolyester with increased molecular weight.

None of the prior art documents, alone or in combination, motivate, teach, direct or suggest a process as defined in claims 1 and 6 of the present invention. Accordingly, applicants respectfully submit that claims 1 to 6 are patentable over all of the applied references of record.

Withdrawal of the rejections advanced in the official action of May 18, 2007 and early passage of this application to allowance are therefore solicited.

## III. Conclusions

Every effort has been made to advance prosecution of this application to allowance. Therefore, in view of the amendments and remarks above, applicants

suggest that all claims are in condition for allowance and Official Notice of the same is solicited.

Should any small matters remain outstanding, the Examiner is encouraged to telephone the Applicants' undersigned attorney so that the same may be resolved without the need for an additional written action and reply.

An early and favorable reply on the merits is awaited.

Respectfully submitted,

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